

April 17, 2007

Appendix A: Response to 2006 EWA Panel Review

Programmatic Recommendations

1. Coordinate and integrate environmental water programs

Since 2001, EWA review panels have consistently urged the EWA implementing agencies to coordinate and integrate the existing environmental water programs with the goal of maximizing the water's benefits to native fish; both upstream and in the Delta. Again in 2006, the review panel reiterated that one of the weaknesses of the EWA program is that "Real integration of all the sources of environmental water is lacking."

The implementing agencies have taken this charge seriously, and to the extent possible have coordinated and integrated the use of the three major environmental water programs (i.e., the EWA, and the CVPIA (b)(2) and (b)(3) programs) to protect fish and improve aquatic habitat. In November, 2004 the implementing agencies specifically responded to the panel's concerns, and presented the panel with a report outlining how the environmental water programs are currently being coordinated and integrated. This report also discussed in detail why a more complete integration of the programs is not possible under the current regulatory structure.

While the goal of truly integrating all sources of environmental water is a laudable one, the constraints on doing so still remain. In fact, the situation is worse now than it was in 2004. The Calfed Environmental Water Program (EWP) has never provided real water for instream benefits, and with the exception of a pulse flow study on Clear Creek, has largely become inactive due to lack of funding. There remain only three active environmental programs, and the future of the EWA Program after 2007 is uncertain.

The coordination/integration process adopted by the implementing agencies continues to function as before. The sections below are an update of the 2004 agency coordination report and describe the three remaining programs, the regulatory constraints, and the coordination process that takes place among the agencies to integrate and maximize the effective use of the limited environmental water available for fish protection and habitat improvement. Short of changing the primary objectives or the regulatory requirements of the three remaining environmental water programs, there is no apparent way the programs can be further integrated.

Management Framework

The EWA implementing agencies are the California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NOAA Fisheries), California Department of Water Resources (DWR), and the U. S. Bureau of Reclamation (USBR).

Three of the five agencies implementing the EWA are also the Ecosystem Restoration Program implementing agencies. These three agencies (CDFG, FWS, and NOAA Fisheries), commonly referred to as the management agencies, are responsible for managing EWA assets, coordinating and integrating EWA actions with other environmental water management actions, and recommending fish actions. The other EWA implementing agencies, DWR and USBR, commonly referred to as the project agencies, are responsible for acquiring water, accounting for EWA assets, and operating the state and federal water projects.

Three Environmental Water Management Programs

There are three main environmental water management programs available to the ERP Implementing Agencies for protecting species, improving habitat, and restoring ecosystems. Each of these programs complements the other while having differing goals and priorities due to each having specific authorization with a distinct purpose and funding source. This section briefly identifies the three water management programs and how they coordinate and integrate with a specific emphasis on the EWA.

The three water management programs are the EWA, the CVPIA Section 3406 (b)(2) water, and CVPIA Section 3406 (b)(3) Water Acquisition Program (WAP):

EWA: The EWA is a multi-objective California Bay-Delta Authority program that prioritizes protection of listed species in the Bay-Delta estuary beyond the regulatory baseline through environmentally beneficial changes in SWP/CVP operations at no uncompensated cost to the project's water users. The EWA primarily provides listed aquatic species protection and contributes to ESA regulatory commitments for State Water Project (SWP) and Central Valley Project (CVP) operations. Since 2001 the EWA has been primarily focused on the ERP's objective to reduce the adverse impacts of diversions at the state and federal pumps in the Delta.

CVPIA Section 3406 (b)(2) program: The Department of Interior's (b)(2) program dedicates and manages annually 800,000 acre-feet of Central Valley Project (CVP) yield for the primary purpose of implementing fish and habitat restoration actions that contribute to the restoration and doubling of the natural production of anadromous fish. (b)(2) water also has a secondary purpose of assisting in meeting the 1995 WQCP and post-1992 ESA requirements. Because the (b)(2) water is also CVP water, the (b)(2) fish actions are implemented on CVP-controlled streams, i.e., Clear Creek, the Sacramento, American, and Stanislaus rivers, and in the Delta.

CVPIA (b)(3) Water Acquisition Program (WAP): The (b)(3) Water Acquisition Program purchases water to supplement (b)(2) and to obtain supplemental level 4 Refuge water. From 1995 to 2000 the (b)(3) program acquired supplemental water for anadromous fish on Battle Creek by paying for foregone power generation (ranging from 6,000 acre-feet to 20,000 acre-feet/year). Since 1997, the (b)(3) program has purchased and managed instream flows pursuant to the San Joaquin River Agreement and in support

of the Vernalis Adaptive Management Plan (VAMP) on the Stanislaus, Merced, and Tuolumne Rivers.

These water management programs could be viewed as part of an environmental water management portfolio. Managed together they complement the environmental water quality and flow standards to benefit aquatic species, their habitats, and the ecosystem processes on which those habitats depend. See Table 1.

Coordination/Integration Process

Coordination (i.e., the discussion of what to do) and integration (i.e., deciding jointly what to do) of the three environmental water programs takes place at weekly meetings of the Environmental Water Account Team (EWAT), (b)(2) Interagency Team (B2IT), Data Assessment Team (DAT), Water Operations Management Team (WOMT), and monthly meetings of the Calfed Operations Group. The (b)(2) and EWA are closely coordinated and integrated to maximize fishery benefits. A monthly planning model guides decisions made jointly regarding implementation of EWA, (b)(2) and (b)(3) fish actions; daily operations are discussed at WOMT, EWAT, B2IT, and DAT weekly meetings. See the Fish Action Decision Process for more information (Attachment 1).

Other coordination efforts take place on a less frequent or on an as-needed basis. For example, the EWA coordinates with the Delta Smelt Working Group, EWA Science Advisors, Operations and Fishery Forum, ERP Implementing Agency Managers, AFRP Habitat Restoration Coordinators, American River Operations Group, and others at their respective meetings or whenever project operations require their input.

Examples of Integration and Coordination of EWA fish actions with the other environmental water management programs

The EWA, (b)(2) and (b)(3) programs have coordinated and integrated each year since 2001 to help implement the San Joaquin River Agreement (SJRA). The SJRA is a consensus based approach to implementing the State Water Resources Control Board 1995 Water Quality Control Plan for the lower San Joaquin River and the Bay-Delta. A key part of the SJRA is the Vernalis Adaptive Management Program (VAMP). VAMP is designed to protect juvenile Chinook salmon migrating from the San Joaquin River tributaries (Stanislaus, Tuolumne, and Merced rivers) through the Delta. It is also a scientifically recognized experiment to determine how salmon survival rates change in response to alterations in San Joaquin flows and SWP/CVP exports with the installation of the Head of Old River barrier (HORB). VAMP employs an adaptive management strategy to use current knowledge of hydrology and environmental conditions to protect Chinook salmon smolt passage, while gathering information to allow more efficient protection in the future.

The VAMP provides for a 31-day pulse flow (target flow) in the San Joaquin River at Vernalis from approximately April 15 – May 15, along with a corresponding reduction in SWP/CVP exports, with the HORB in place. Under the SJRA, several water districts agreed to provide the supplemental water, limited to a maximum of 110,000 AF, needed

to achieve the VAMP target flows. Annually the (b)(3) program pays the water districts to ensure that the VAMP supplemental water is provided from the San Joaquin tributaries during April-May. VAMP supplemental water releases are integrated and coordinated with releases of (b)(2) water on the Stanislaus River. See Figure 1 for a representative integrated flow operation for VAMP in 2003).

While operating pursuant to VAMP, the EWA is used to implement SWP export curtailments beyond the Calfed ROD baseline and (b)(2) water is used to implement CVP export curtailments beyond the CVPIA baseline (see Figure 2 for a representative SWP/CVP export operation during VAMP in 2003). In 2001 and 2002, several Federal District Court decisions resulted in a modification to how (b)(2) water is accounted, thus reducing the amount of (b)(2) fish actions that could be implemented each year. Consequently, in several years, the EWA has been used to implement export reductions at the CVP facilities (primarily after the VAMP period) in addition to the export reductions at the SWP facilities.

EWA fish actions are coordinated and integrated with other water management actions as well. For example, annually in October, the SJRA and the (b)(3) program release 15,000 AF of water on the Stanislaus River and 12,500 AF of water on the Merced River to improve upstream migration of adult Chinook salmon and increase available salmon spawning and egg incubation habitat. In fall 2001, the EWA and (b)(3) river releases were integrated on the Merced River. The EWA and (b)(2) river releases were integrated on the American River in fall 2001 and 2002. The EWA is coordinated with SWP operations on the Feather River and EWA water has been acquired and released from the Yuba River each year.

The EWA fish actions will continue to be integrated and coordinated with (b)(2) fish actions and VAMP implementation. All water management programs will consider additional opportunities for integration and coordination with the other environmental water management efforts and ERP restoration measures. Each integration and coordination opportunity is unique, yet in the context of the Calfed Program contributes to the overall goal of ecosystem restoration.

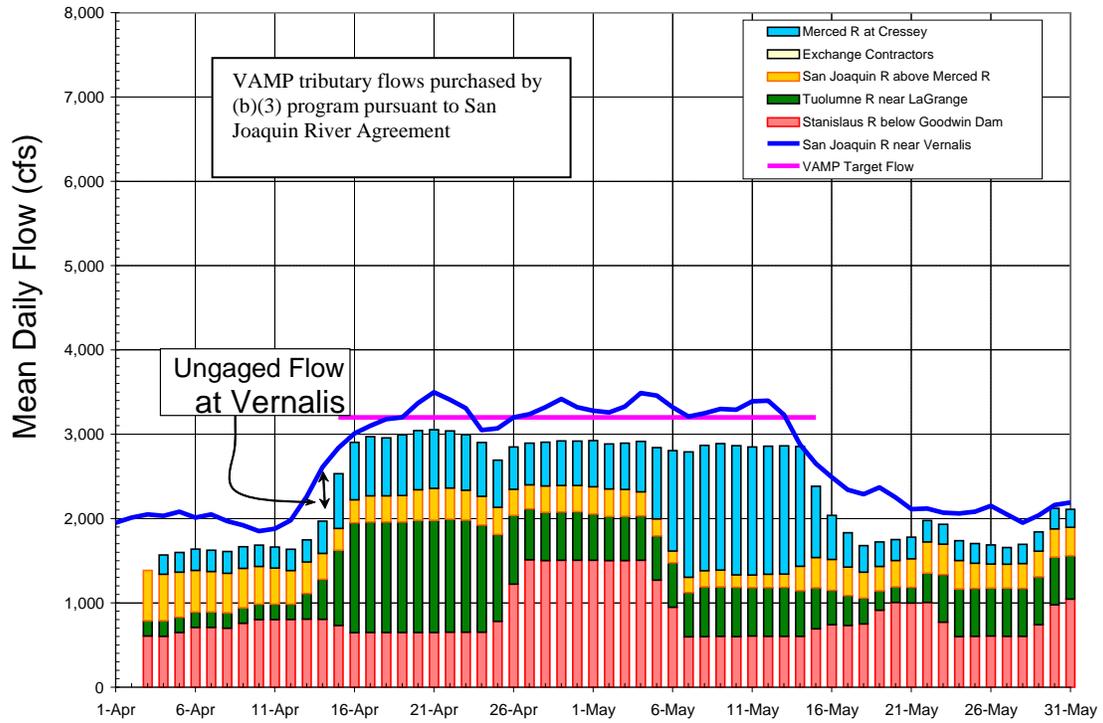
Summary

EWA fish actions will continue to be integrated and coordinated with (b)(2) fish actions and (b)(3) VAMP implementation. As the EWA Team has gained experience implementing EWA fish actions, it has become more knowledgeable and creative in using EWA assets in ways that were not envisioned in 2001. The EWA Team will continue to investigate opportunities to use EWA for upstream fish actions consistent with the EWA goals of providing fish protection and ESA regulatory commitments. The EWA Team remains committed to pursuing coordination and integration opportunities with other Calfed Program elements, specifically the ERP. As one of several environmental water management programs, the EWA contributes to a multi-objective, long-term water management strategy for the restoration of the Bay-Delta system.

Table 1. Comparison of the Environmental Water Account, Environmental Water Program, b2, and WAP.

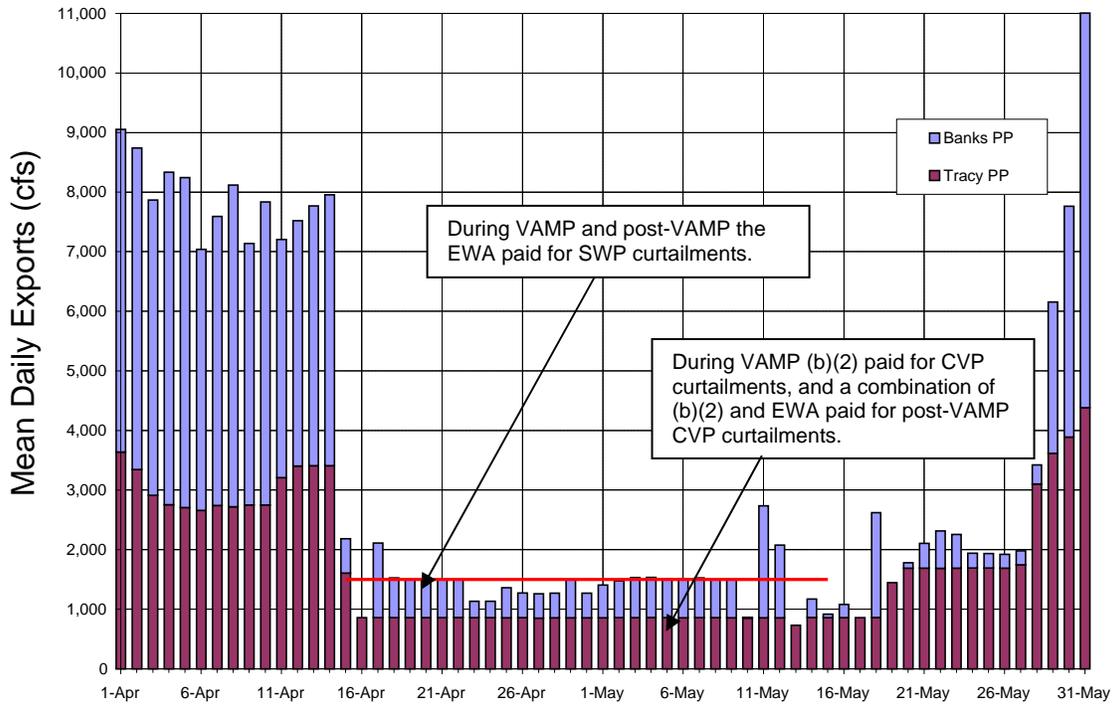
	I. Environmental Water Account	Environmental Water Program (INACTIVE)	II. CVPIA (b)(2) water	III. CVPIA (b)(3) Water Acquisition Program
Primary Purpose	Acquire water that can be delivered south of the Delta to replace pumping forgone by CVP/SWP pumps for fish protection and recovery purposes, and augmenting streamflows and Delta outflow. Instream benefits are generally not a primary purpose, but are often a secondary benefit.	Acquire water on streams tributary to the Sacramento and San Joaquin river systems to provide instream benefits to fish and ecological processes. Instream benefits are a primary purpose and all acquisitions must have a demonstrable biological or ecological benefit.	"Dedicate and manage annually 800,000 AF of CVP yield for the primary purpose of implementing the fish, wildlife, and habitat restoration purposes... and to help meet WQCP and ESA obligations."	"... for acquisition of a water supply to supplement the quantity of water dedicated to fish and wildlife purposes ..." per CVPIA 3406 (b)(3).
Geographic Range	North and south of the Delta, with the mix depending on cross-Delta capacity, and locations depending on willing sellers of sufficient water volumes from storage reservoirs, groundwater substitution, and groundwater banks.	Pilot effort focused on five streams with highest priority during first phase.	North and south of the Delta.	Throughout the Central Valley purchased from willing sellers. Includes modification of operations, water banking, conservation, transfers, conjunctive use, fallowing, options, etc.
Stream Preferences	Primarily used to modify SWP/CVP Delta export operations. Preference for larger streams with significant reservoir storage, ample water supplies, and a history of water sales.	Preference for smaller spring-run salmon streams, relatively minor amounts of storage, and lacking history of water sales.	Limited to CVP-controlled streams and facilities: i.e., Clear Creek, Sacramento River, American River, Stanislaus River, and the Tracy export facility.	Nineteen streams and rivers throughout the Central Valley that have the greatest biological benefit to anadromous fish populations.
Science	Scientific validity of program examined through external scientific review process managed by Science Program. Evaluation of overall program, rather than individual acquisitions. Compliance with environmental documentation for transfers.	Obligation to establish a sound scientific basis and to establish an experimental adaptive management framework for each acquisition.	Scientific basis for (b) (2) fish actions includes AFRP documents, published literature, DFG and IEP reports. (b)(2) fish actions are coordinated with an interagency team.	Acquisition priorities based on the biology, hydrology and economics decision support model which is part of the "Water Management Strategy and Water Acquisition Plan".
External Review Requirements	CEQA/NEPA compliance for most transfers, with SWRCB environmental review for any transfers exempt from CEQA.	Obligation to conduct scientific peer review and agency reviews similar to CBDA Ecosystem Restoration PSP process.	NEPA compliance, and CVPIA mandates that (b)(2) be managed pursuant to conditions specified by USF&WS after consultation with USBR, DWR, and CDF&G.	NEPA compliance for all purchases, SWRCB approval for transfers and post-1914 water right purchases and superior court action for pre-1914 water right purchases.
Length of Acquisition	To date, all acquisitions have been short-term (1 year or less).	Program has a goal of purchasing water rights or long term leases.	Long-term. Authorized by CVPIA in 1992. Annual use of 800 TAF.	Short term and spot market acquisitions have dominated with only one permanent water right purchase to date. Program limited by funding constraints.
Agency Support	Nearly all work, other than environmental documentation, has been completed by agency staff members from all five implementing agencies.	Primary agency support has been one USF&WS staff member. Preponderance of support has been provided by consultants.	FWS agency support is 2 USF&WS staff and two USBR staff. Additional support from DWR, DFG, and NOAA Fisheries.	Primary support has been one USBR staff and one USF&WS staff, NEPA documentation conducted by contractor.
Method of Acquisition	All acquisitions have been made by DWR staff and USBR staff.	Methods will be project specific and may be made by state agencies or USBR depending on the funding source.	CVPIA authorization of 800,000 AF of CVP water annually.	All acquisitions have been made by WAP staff of USBR and the USF&WS.
Public Involvement	Public involvement through Calfed Ops, OFF, DAT and for environmental documentation, SWRCB approvals, and approvals by the boards of directors of willing	Extensive public involvement required due to commitment to pursuing locally supported actions.	Public involvement through Calfed Ops, OFF, DAT and biannual stakeholder meetings.	Public involvement required for NEPA documentation, and development of the "Water Acquisition Strategy and Water Management Plan".

**Figure 1. VAMP 2003 --- San Joaquin River near Vernalis
With Lagged Contributions from Primary Sources**



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**Figure 2. VAMP 2003
Federal and State Exports**



Attachment 1. Fish Action Decision Process

The first EWA fish action was implemented in January 2001. Since that time the process used to decide when and where to use EWA assets has steadily evolved to include multiple groups, the use of decision trees/matrices for Chinook salmon and delta smelt, and improved real-time communications.

In general, the authority to take an EWA fish action resides with the Water Operations Management Team (WOMT) after getting input from the Delta Smelt Working Group (DSWG), Data Assessment Team, B2 Interagency Team, and the EWA Team. Other groups with specific interests or expertise are also consulted on an as-needed basis. The following descriptions identify the main groups involved and describe their particular role in the process.

Water Operations Management Team (WOMT)

Consists of management-level participants from the Project and Management Agencies. Meets weekly to provide oversight and decision making that must routinely occur in the CALFED Ops process. Relies heavily on the DSWG, DAT, B2IT, and EWAT for recommendations on fishery actions. It also uses the DAT and CALFED Ops Group to communicate with stakeholders.

Environmental Water Account Team (EWAT)

Members are from the Project and Management Agencies. Meets weekly to manage water purchased or gained through operational flexibility for at-risk species. EWAT also coordinates with the B2IT, DAT, and WOMT to develop strategies that maximize benefits derived from implementation of actions under the CVPIA and EWA program.

B2 Interagency Team (B2IT)

Technical staff from the Project and Management Agencies. Meets weekly to discuss implementation of section 3406 (b)(2) of the CVPIA which defines the dedication of CVP water supply for environmental purposes. Communicates with EWAT, DAT, and WOMT to ensure coordination.

- Members – USBR, USFWS, NOAA Fisheries, DWR and DFG
- Meets weekly or bi-weekly as needed to review CVP operations, produce forecasts of operations, review b(2) daily accounting and resolve issues at a technical level.
- Forecasts produced monthly with b(1) and b(2) action placeholders.
- Hypothetical daily operation created using actual hydrology.
- Daily accounting done by a comparison of the hypothetical base operations to actual operations (not including EWA or water augmentation tools).

Data Assessment Team (DAT)

Technical staff from Project and Management Agencies, as well as stakeholders. Meets weekly to review real-time information relating to fish movement, location, and behavior. The DAT makes recommendations regarding potential changes in project operations to protect fish.

Operations and Fishery Forum (OFF)

Stakeholder-driven process to disseminate information regarding recommendations and decisions about the operations of the CVP and SWP. OFF members are considered the contact person for their respective agency or interest group. The OFF may be directed by the CALFED Ops Group to develop recommendations regarding operational responses for issues of concern raised by member agencies.

CALFED Operations Group

Consists of the Project Agencies, Management Agencies, SWRCB staff, and US EPA. Meets monthly in a public setting with stakeholders to discuss operations of the CVP and SWP, implementation of the CVPIA and EWA, and coordination of endangered species protection.

Fisheries Technical Teams

Delta Smelt Working Group

Consists of representatives from FWS, CDFG, CDWR, USEPA, USBR, and the California Bay-Delta Authority. This group meets on an as-needed basis in response to triggers incorporated into the Delta Smelt Risk Assessment Matrix (DSRAM), which is part of the FWS Biological Opinion on the Coordinated Operations of the CVP and SWP and the Operations Criteria and Plan (July 2004). The Working Group makes recommendations pertaining to SWP/CVP export reductions, south Delta barrier operations, San Joaquin flows, and Delta cross-channel gate operations.

American River Operations Work Group (AROG)

AROG is open to anyone, but generally includes representatives from several agencies and organizations with on-going concerns regarding the management of the lower American River. Meets monthly or on an as-needed basis during periods of concern, with the purpose of providing fishery updates and recommendations for operations beneficial to fish resources in the lower American River.

Sacramento River Temperature Task Group

Multi-agency group formed pursuant to SWRCB Water Rights Orders 90-5 and 91-1, to assist with meeting Sacramento River temperature objectives to improve and stabilize the winter-run Chinook population on the Sacramento River.

Delta Cross-Channel Project Work Team

A multi-agency group whose purpose is to determine and evaluate the effects of DCC gate operations on Delta hydrodynamics, water quality, and fish migration.

Other Groups

San Joaquin River Management Group

VAMP Technical Group

Ecosystem Restoration Program Implementing Agency Managers
(ERPIAM's – USF&WS, NOAA Fisheries, CDFG)

EWP Core Team (USF&WS, NOAA Fisheries, CDFG, DWR, USBR, DOJ)

AFRP Habitat Restoration Coordinators

Ecosystem Restoration Program Subcommittee

EWA Science Advisors

IEP Science Program

Pelagic Organism Decline Project Work Team (POD PWT)

Coordination and Decision Process

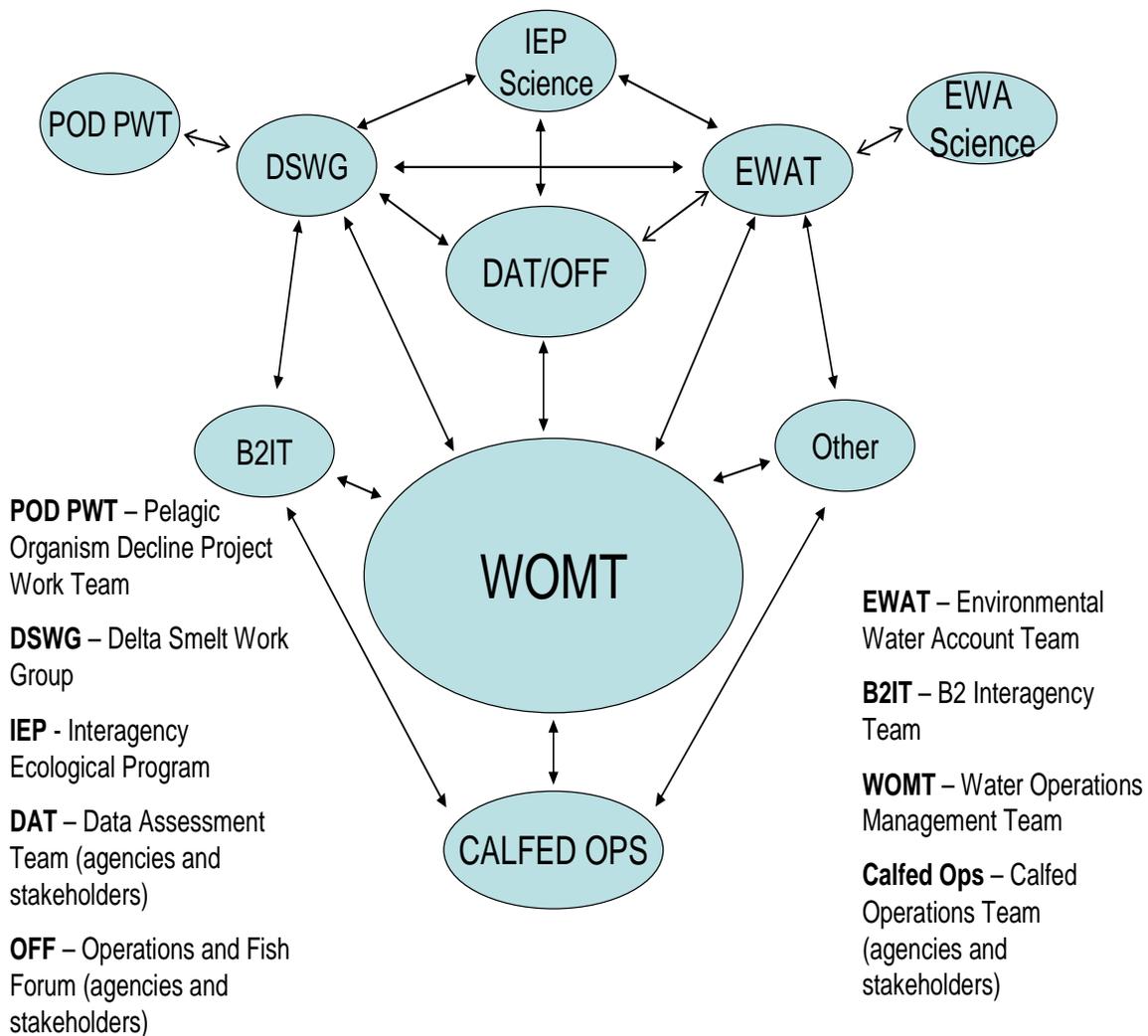


Figure 1. Diagram of the groups involved in real-time fish monitoring, project operations, and coordination between environmental water programs.